



**YD200WLED**  
**LED operating lamp**

**Operation, Installation and Maintenance Manual**  
**(Technical Specifications)**

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# **1. INTRODUCTION**

## **1.1 YOUR QUALIFICATION AS USER**

- **For trained technical staff only**

The LED operating lamp and these operating instructions are intended for medical and technical staff in the hospital and doctor's office who are familiar with the work involved from their medical training and hold a licence to that effect (in states where such a licence is required by law).

- **Adjustments to be carried out by trained service technicians only**

The work in the "Adjustments" section must be carried out by one of the service technicians in compliance with the safety information.

- **Cleaning to be carried out by trained cleaning staff only**

The equipment must only be cleaned by trained cleaning staff.

**Please read through these operating instructions carefully before using the equipment. This will allow you to take advantage of all the benefits offered by this new item of equipment and to protect yourself and others from any harm.**

**PS: Please pay attention to the electromagnetic interference between the device and the device.**

## **1.2 INSTRUCTIONS OF SAFE OPERATION**

- **Use only after proper installation**

These operating instructions only apply after proper installation in accordance with the applicable installation instructions and proper commissioning by the authorized installation engineer. These operating instructions are not a replacement for training the user in the safe use, function, operation and care of the equipment.

- **Comply with safety instructions**

The equipment's construction and design are state-of-the-art and it is safe to use when operate in accordance with all the instructions and safety information contained in these operating instructions.

However, the equipment can constitute a hazard, in particular if it is operated by inexperienced staff or those with insufficient training, or if it is used incorrectly, in breach of the safety instructions contained in these operating instructions or not in accordance with its intended use.

- **In case of problems**

If you encounter problems which are not covered by these operating instructions, you should immediately call for the after-sale service for your own safety and that of your patients.

### **1.3PRODUCT DESCRIPTION AND APPLICATION**

The product consists of light source and light stand. It is applicable in the operating room and treatment room for local illumination of the patient's surgery or examination area, main for surgical assisted illumination. It is a lighting fixture that does not have an automatic fail-safe function.

### **1.4NOTICE**

**Light allergy disabled this product**

### **1.5 WORKING PRINCIPLE**

An LED secondary light-emitting tube is installed in each of the lamps, and the light of the secondary light-emitting tube is irradiated onto the convex mirror and then projected onto the illuminated surface. The convex mirror is the key component of the lamp. According to the surgical requirements, the dimensions of each part of the convex mirror are determined after precise optical calculation. The light passes through the aluminum shell that absorbs the heat of the diode, and then the convex mirror reflects the light to one meter to form a very bright cold spot. The doctor can clearly locate the spot in the diagnosis or treatment area.

### **1.6 PRODUCTION DATE**

Please refer to the product label

### **1.7 WARRANTY**

2 years

## **2. Important information for the operator**

### **2.1 Security features**

**Trained personnel:** The cleaning and disinfection of the LED operating lamp described in Section 13 must only be performed by trained cleaning personnel.

**Trained service personnel:** Inspection and maintenance work in Section 14 must be performed by trained service personnel only.

**Maintenance, Repair, and Replacement:** The manufacturer is legally responsible for the safety of this equipment only if maintenance, repair, and replacement of the equipment is performed by the manufacturer or its representatives in accordance with the manufacturer's guidelines.

### **2.2 Training Responsibilities**

Train users:

Use these operating manuals as a basis for training personnel on equipment operation, cleaning and care.

### **2.3 Retrofits and modifications**

Unauthorized Alterations and Modifications:

For safety reasons, unauthorized modifications and modifications to the device are not permitted.

Unauthorized modifications and modifications to the equipment will void the manufacturer's warranty. The manufacturer is not liable for damage or damage caused by unauthorized alterations and modifications or the use of non-original spare parts.

Use original spare parts only: Use only original spare parts!

### **2.4 Safety instructions for the environment**

Disposal of packaging materials:

The removed packaging materials should be disposed of in accordance with the national environmental protection requirements.

Disposal of equipment:

When the equipment has reached the end of its useful life, it must be taken out of service.

The dismantled equipment should be classified according to the different materials of the product components.

 **WARNING: First cut off all power to connected equipment before dismantling the equipment.**

### 3. Technical characteristics of LED lighting system

#### 3.1 LED lights

LED operating lamp uses an innovative light source, namely LED (Light Emitting Diode).

##### **Average service life:**

LED lights have an advantage over conventional halogen or gas discharge lamps in that they have a very long service life.

##### **Low heat production:**

The bigger advantage of LEDs is that they generate less heat because they don't emit IR (infrared rays) or UV (ultraviolet rays), which can be irritating to the skin.

##### **Extremely low failure rate:**

By using a large number of LEDs, the lamp head has a very low failure rate, the failure of a single LED will not impair the function of the lamp head.





### 4. Technical parameters


















Electrical characteristics	
Content	YD200WLED
Input power	50VA
LED bulb power rate	3.2V/1W
LED bulb quantity	13
Main fuse	F1.6AL250V
Power voltage	AC110-220V
Power frequency	50Hz
Technical data	
Rated illuminance	≥60,000lx
Color temperature	4800K±300K
Spot diameter	≥130mm
Total irradiance	Not over 1000W/m <sup>2</sup> (Note that irradiance may exceed 1000W/m <sup>2</sup> in areas where several lamp caps overlap lighting)

Illuminance depth	20%: ≥1200mm	
Spot distribution		Spot diameter between ≥120mm,when edge illuminance reaches 50% of the center illuminance light, the diameter d50 should not be less than 50% of spot diameter d10.
CRI		85≤Ra≤100。
The ratio of irradiance to illumination		Irradiance Ee to illuminance Ec ratio should not exceed 6mW/(m²lx)
Mechanical characteristics		
Content	YD200WLED	
The lamp head rotates around a curved pipe	150°	
Balance arm swing up and down	80°	
The rotating body rotates around the fixed seat	180°	
Balancer horizontal rotation	360°	
Lamp head wrapped around balance arm	120°	

## 5. Specification of conformity

### 5.1 Symbols of security requirements and their meanings

Symbol	Implication	Symbol	Implication
~	Alternating current	N	Permanent installation of intermediate connection points for equipment
	Refer to the instructions for use		Follow the operating manual note: "Follow the operating manual" on the device
	Package symbol, fragile, handle with care		Package symbol, keep the way up, it shows the correct upright position of the distribution packages for transport and storage.

	Package symbol, keep away from rain		Package symbol, do not roll over the package during transportation.
	Package symbol, stacking limit by number, it shows the maximum number of identical transport package which may be stacked on the bottom one, where “n” is the limiting number.		Package symbol, the package shall be stored, transported, and handled within temperature limits.
	Attention! Refer to the instruction		General warning symbols
	Mind Your Head		Non professionals are prohibited from dismantling
Class I	Equipment that relies on basic insulation and additional safety precautions for connecting protective grounding conductors to accessible parts	IPX2	The degree of protection against ingress of liquid is classified as ordinary equipment
 <b>WARNING</b>	The operator SHOULD operate in accordance with the instructions under the symbol, otherwise it may cause personal injury.		Warning of electric shock that may cause serious injury or even fatal injury
<b>CAUTION</b>	The operator SHOULD operate in accordance with the instructions under the symbol, otherwise it may cause product failure, damage or affect the use.	 Prohibited	Operation prohibited by the operator
	This is used to indicate an action that must be performed		This symbol is used to identify the manufacture’ s series number
	CE Mark		This symbol is used to indicate the name and address of the manufacturer.
	Authorized Representative in the EUROPEAN COMMUNITY		Use-by date

## 5.2 Product Standards



Execute the product technical requirements of this product

### **5.3 Mandatory standards**

This product fully complies with IEC60601-1 "Medical electrical equipment Part 1: General safety requirements" and the industry standard IEC60601-2-41 "Medical electrical equipment Part 2-41: Special requirements for basic safety and basic performance of shadowless operating lights and diagnostic lights". IEC 60601-1-2 Medical electrical equipment - Part 1-2: General safety requirements

## **6.TRANSPORT AND STORAGE**

6.1 Ambient temperature: -40°C~+55°C

6.2 Relative humidity: ≤93% Indoor without corrosive gas and good ventilation.

6.3 Atmospheric pressure: 860hPa~1060hPa

6.4 Do not unpack before installation

## **7.ENVIRONMENT SAFETY**

### **7.1 Disposal of packaging materials**


The removed packaging materials should be disposed of in accordance with the national environmental protection requirements.

### **7.2 Disposal of equipment**

The service life of LED operating lamp is 8 years. In order to ensure the safe use of the product by the user, please replace it after eight years.

When the equipment has reached the end of its useful life, it must be taken out of service.

The dismantled equipment should be classified according to the different materials of the product components.

 **WARNING:** Cut off all power to connected equipment before dismantling the equipment.


## **8.PRE-INSTALLATION INSTRUCTION**

### **8.1 Normal working conditions:**

- Power supply voltage: AC110-240V;
- frequency: 50/60Hz;
- Standard installation height: 2m.
- Working temperature: 10 °C ~ 30 °C; relative humidity is not more than 80%;
- The lamp head uses 24V extra low voltage.

**PS:** The degree of protection against electric shock is no applied parts.

Working system: continuous operation. It is a malfunction light.

 **Note:** Foundation construction and its safety are the responsibility of the user. Users must install AC110-240V power supply double-way cut-off switch on the wall.

## 9.INSTALLATION INSTRUCTION

### 9.1 Preparation:

Please check the packing box according to the ordered product model, open the packing box, take out the protective packing material, and take out the parts of the LED surgical lighting.

Please check carefully according to the following packing list, if there is any missing parts, please contact our company immediately

Packing List

YD200WLED
①Rotating body*1 ②Balance arm*1 ③Lamp head*1 ④User manual*1、 Qualified Certificate*1、 ⑤Fuse*2

**Note:** Before installation, ensure that the protective packaging is intact to avoid damage or loss of equipment components.

 **WARNING:** Double check the condition of the foundation plate to ensure its safety.

Fully check the electrical connection and safety to ensure its safety.

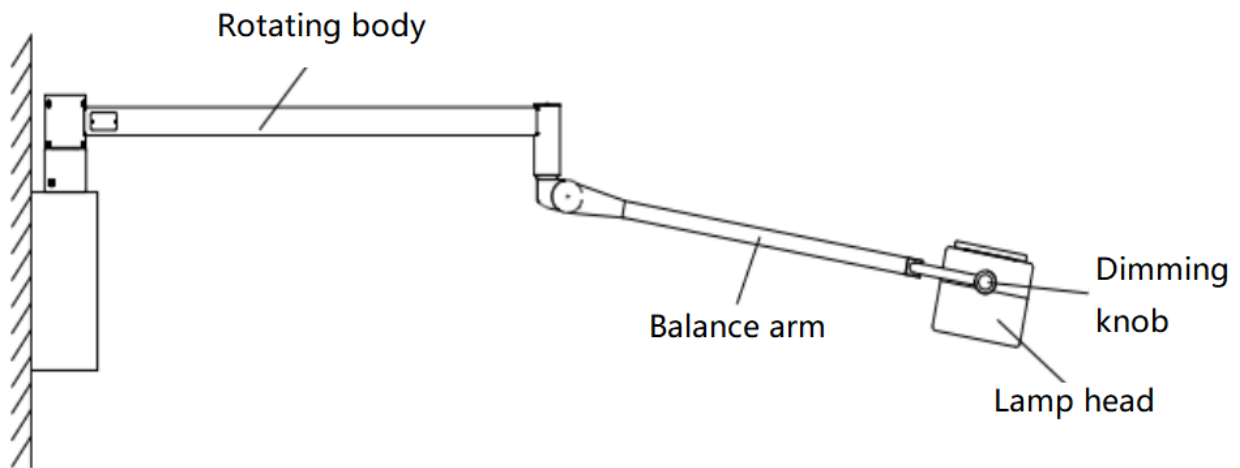
Strictly follow the following requirements and procedures for installation.

**9.2 The installation method of YD200WLED is as follows(see Figure 1)**

- a. First, fix the base on the wall, fix the rotating part, and keep it horizontal;
- b. Connect the balance arm to the rotating body;
- c. Connect the balance arm to the lamp head;

**Note 1:** For the connection points of components in the same set of products, please assemble them according to the same code to prevent mismatched components.

**Note 2:** Surgical lighting should be installed according to the structural diagram and should not be changed without authorization.




(see Figure 1)

## 10. OPERATION INSTRUCTION

1. Power on use: Before surgery, plug in the power supply to indicate that the device is powered on. Turn on the switch and operate it through the handle to adjust the position of the lamp body and the focal plane of the light spot to use.
2. Shutdown: After installation, debugging or use, the switch should be turned off in a timely manner, and then the power plug should be unplugged from the power socket to cut off the power supply, in order to prevent the switch power supply from being in a working state for a long time.
3. Please pay attention to electromagnetic interference between devices.

## 11. BALANCE ARM REGULATION

Item	Picture	Detailed description
11.1 Adjusting the Spring Tension of the Balance Arm	<p>The diagram shows a cross-section of a cover with a small rectangular hole. An 'adjustment rod' is shown being inserted into this hole from the reverse side. A downward arrow indicates the direction of insertion.</p>	Take out the adjustment rod on the reverse side of the cover to adjust the up and down angle of the balance arm, so that the adjustment hole is exposed.

	<p>adjustment hole</p> 	<p>1. Insert one end of the adjustment rod into the adjustment hole, and rotate the adjustment hole clockwise according to the position of the balance arm in this picture (there is a + - mark on the balance arm, adjust in the + direction)</p> <p>2. After every 3 adjustments, the balance arm moves up and down to check whether it can hover normally, and if it can hover normally, reset all accessories in the above order. If you cannot hover, repeat the adjustment.</p>
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## 12.TROUBLESHOOTING

Trouble	Cause	Solution	Reference
<b>Suspension/handling performance section</b>			
Colliding with other components	Height limit setting error	Adjust height limit	Content 11#
<b>Optical systems/lighting technology section</b>			
The interconnecting elements of the lighting module are not lit	Electronic component failure	Call the maintenance department	—
Low illuminance	The illuminance setting is too low	Increase illuminance	10
The lighting area is not circular	The lamp head is not in the surgical field	Reposition the lamp head	9.2
	The lighting area is not set correctly	Adjust the focus lighting area	10
The light is not on	Interruption of power supply	Check the power supply, check the	—

		fuse	
	The lamp head has been turned off by the control panel	Press the on/Off button	10
	Electronic component failure	Call the maintenance department	—
<b>Sterilized part</b>			
The service life of detachable handle is too short	Incorrect sterilization techniques	Check sterilization technique	13.2
The detachable handle is damaged or cracked	It has reached its service life	Change handle	14.14

## 13.CLEANING, DISINFECTION AND STERILIZATION

### 13.1 Cleaning



Warning: 1. It is necessary to use a suitable cleaning agent and clean it with a slightly damp but not wet cloth.

2. Turn off the main power switch on the wall within the working range of the lamp to ensure that the lamp is powered off and prevent it from being turned on again.
3. Avoid splashing wet equipment, do not wet clean the system.
4. Do not insert any objects into the holes of the device.

<i>Note</i>
<p><b>Surface damage</b></p> <ol style="list-style-type: none"> <li>1. Do not use any substances that can cause abrasion, detergents containing gasoline solvents, paint thinners, alkaline, acidic, ethanol-based (such as ethanol, propanol) or cleaning substances containing acetaldehyde.</li> <li>2. Use a small amount of detergent to ensure that no liquid enters the lamp cap or suspension system</li> </ol>

### 13.2 Disinfection and sterilization

#### 13.2.1 Disinfection



Warning: 1. It is necessary to use a suitable disinfectant, and use a slightly damp but not wet cloth for disinfection.

2. Turn off the main power switch on the wall within the working range of the lamp to

ensure that the lamp is powered off.

And prevent it from being opened again.

3. Avoid splashing wet equipment, and do not perform wet disinfection on the system.

4. Do not insert any objects into the holes of the device.

5. The detoxification of the lamp holder can only be performed when the lamp holder is cooled.

### *Warning*

#### **Harmful to health**

Disinfectants may contain substances that are harmful to health

1. Use only disinfectants that meet hospital health regulations
2. The operator must disinfect according to the requirements of the national authority responsible for sanitation and disinfection

### *Note*

#### **Surface damage**

1. To avoid damage to stainless steel components, do not use disinfectants containing chlorine or halogen-based
2. To avoid brittleness of plastic components, use only low-ethanol detergents
3. Use a small amount of disinfectant to ensure that no liquid enters the lamp or suspension system

## **14 INSPECTION, MAINTENANCE AND REPAIR**

### **14.1 Do the inspection before each use as below**

14.1.1 Please check whether the function button on the panel normal works well

14.1.2 Under normal conditions of turning on the lights, please check whether the screws and parts are loose, and whether the joints can be with flexible rotation, to confirm whether the conduction of the lamp is defective, and whether the service life of the lamp is overdue, etc., and it can be used only after checking the normal condition.

14.1.3 Whether the appearance of paint is damaged; (dangerous to open wounds)

14.1.4 Check if the consumables is replaced regularly, and replace it immediately if there is any crack or deformation.

### **14.2 Annual maintenance and repair**

14.2.1 Safety inspection of joints

Since the LED operating lamp is a permanently suspended device, its safety is of paramount importance. It is necessary to regularly check the status of the connecting nuts and other connecting screws on the chassis of the rotating body, and tighten them immediately if any looseness is found.

#### 14.2.2 Electrical Safety Inspection

Check the connection status of the power line on the power board inside the top cover. If the connection is found to be loose, immediately tighten the connection screw on the terminal block. If there is oxidation, replace the connection terminal. Use a shaker to check that the protective ground wire is firmly connected.



NOTE: The above inspections are performed at least once a year.

WARNING: The mains power must be cut off for electrical inspection.

If the user signs a service agreement with the company, the company can conduct regular inspections for the user.

To avoid damage or destruction, if any damage or failure occurs, please contact the Customer Service Department immediately.

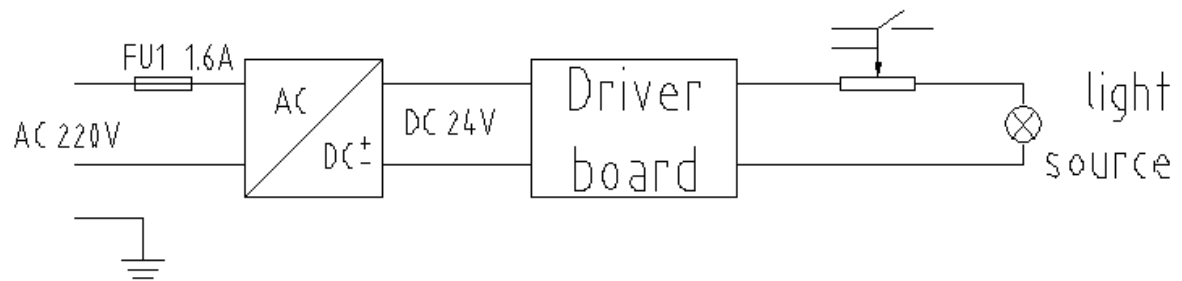
### **14.3 The following circumstances are exempt from liability**

14.3.1 damage caused by force majeure or natural disasters;

14.3.2 exceeds the product lifespan;

14.3.3 Failure to operate, maintain or maintain the product in accordance with the requirements of the product manual;

## 15.CIRCUIT DIAGRAM



**Pic.2 circuit diagram**

## 16.Appendix A (PRODUCT DIAGRAM)





**YD200WLED**